



2019-nCoV Literature Situation Report (Lit Rep)

March 10, 2020

The scientific literature on COVID-19 is rapidly evolving and these articles were selected for review based on their relevance to Washington State decision making around COVID-19 response efforts. Included in these Lit Reps are some manuscripts that have been made available online as pre-prints but have not yet undergone peer review. Please be aware of this when reviewing articles included in the Lit Reps.

Key Takeaways

- **Several new studies have explored the potential efficacy of treatments for other conditions that have been FDA-approved and may have useful applications for COVID-19 patients, though further study and clinical trials are warranted. Among those discussed in the newest literature are cepharanthine (CEP), selamectin, mefloquine hydrochloride, and chloroquine phosphate.**
- **Previous reports have indicated a range of incubation periods among COVID-19 patients. A new report suggests that around 1% of cases may develop symptoms after the standard 14-day monitoring window.**
- **Asymptomatic transmission continues to be documented, with researchers emphasizing how asymptomatic transmission complicates the effectiveness of traditional intervention strategies.**

Transmission

- Lauer et al report that the median incubation period for COVID-19 is 5 days and 97.5% of those who develop symptoms will do so within 11.5 days (CI, 8.2 to 15.6 days) of infection. This means that, 101 out of every 10,000 cases will develop symptoms after monitoring or quarantine. The public health implications of this is that there is need for longer monitoring periods.
Lauer et al. (Mar 10, 2020). The Incubation Period of Coronavirus Disease 2019 (COVID-19) From Publicly Reported Confirmed Cases: Estimation and Application. Annals of Internal Medicine.
Print downloaded Mar 10 from <https://doi.org/10.7326/M20-0504>
- Luo et al report evidence of asymptomatic transmission of COVID-19. They discuss challenges in identifying asymptomatic carriers and patients during their asymptomatic phase and advocate for new preventive strategies to include this epidemiological evidence.
Luo et al. (Mar 9, 2020). A confirmed asymptomatic carrier of SARS-CoV-2. Pre-print
downloaded Mar 10 from [https://doi.org/ 10.1097/CM9.0000000000000798](https://doi.org/10.1097/CM9.0000000000000798)

Testing and Treatment

- Fan et al repurposed clinically approved drugs for the treatment of COVID-19, reporting that cepharanthine (CEP), selamectin, and mefloquine hydrochloride exhibited complete inhibition of cytopathic effects in cell culture at 10 µmol/L and should be considered potential drugs for treating SARS-CoV-2 infection. Clinical trials are needed.

Fan et al. (Mar 6, 2020). Repurposing of clinically approved drugs for treatment of coronavirus disease 2019 in a 2019-novel coronavirus (2019-nCoV) related coronavirus model. *Print* downloaded Mar 10 from <https://doi.org/10.1097/CM9.0000000000000797>

- Sharfstein et al discuss the race against time to discover new and better diagnostic tools and the technical challenges of the tests developed by CDC for diagnosis of COVID-19. They discuss the regulatory structures for diagnostic tests and draw distinction between testing capacity for public surveillance and clinical care. Some of the challenges encountered by the labs included difficulty verifying results as some came back as inconclusive or invalid due to lack of negative control. The paper further highlights the controversial area of public policy on tests, major gaps in oversight of test accuracy and validity during declared public health emergencies, and ability of FDA to identify and quickly address testing errors by labs.

Sharfstein et al. (Mar 9, 2020). *Diagnostic Testing for the Novel Coronavirus*. JAMA. <https://jamanetwork.com/journals/jama/fullarticle/2762951>

- Touret and Lamballerie provide a commentary on studies that demonstrated benefits of chloroquine phosphate in inhibiting the exacerbation of pneumonia, improving lung imaging findings, promoting a virus negative conversion, and shortening the disease course. They however caution against drawing definitive conclusions without a clinical trial.

Touret and Lamballerie (Mar 2, 2020). *Of chloroquine and COVID-19*. *Antiviral Research*. Pre-print downloaded Mar 10 from <https://doi.org/10.1016/j.antiviral.2020.104762>

Clinical Characteristics and Health Care Setting

- Biondi-Zoccai et al describe the epidemiology, clinical signs, diagnosis, pharmaceutical and non-pharmaceutical interventions used, and clinical outcomes and associated complications of COVID-19 infection in Italy. The critical differential diagnoses for physicians is provided to proactively diagnose, risk-stratify, and manage patients with COVID-19 while not disregarding all other important cardiovascular conditions, which may well be worsened by the disease.

Biondi-Zoccai et al. (Mar 9, 2020). *SARS-CoV-2 and COVID-19: facing the pandemic together as citizens and cardiovascular practitioners*. *Minerva Cardioangiologica*. Pre-print downloaded from <https://doi.org/10.23736/S0026-4725.20.05250-0>

- Ji et al reviewed literature to compare the difference between severe and non-severe COVID-19 pneumonia to identify common and symptoms associated with disease severity. Fever (89.2%), cough (67.2%), fatigue (43.6%) were common to severe and non-severe while polypnea/dyspnea, fever, and diarrhea were associated with severe disease.

Ji et al. (Mar 9, 2020). *Comparison of severe and non-severe COVID-19 pneumonia: review and meta-analysis*. Pre-print downloaded Mar 10 from <https://doi.org/10.1101/2020.03.04.20030965>

- Ma et al discuss emergency management and prevention and control of COVID-19 in a hospital setting. They discuss changes in general, enforced ward and business management, leadership and hospital set up, and contingency plans. They report on personnel education and training, resource mobilization, three level prevention and control mechanisms, and environment and access management during the outbreak.

Ma et al. (Mar 9, 2020). Emergency management of the prevention and control of novel Coronavirus pneumonia in specialized branches of hospital. Pre-print downloaded Mar 10 from <https://doi.org/10.1111/acem.13958>

Other Resources and Commentaries

- [Features, Evaluation and Treatment Coronavirus \(COVID-19\)](#) – A new report out of Italy describing clinical features and considerations.
- [Diagnostic Testing for the Novel Coronavirus](#) –JAMA (Mar, 2020)
- [Detection of Novel Coronavirus by RT-PCR in Stool Specimen from Asymptomatic Child, China](#) – Research Letter, Vol 26, Number 6- June 2020
- [Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study.](#) –The Lancet (Mar 9, 2020)